FIG. 1

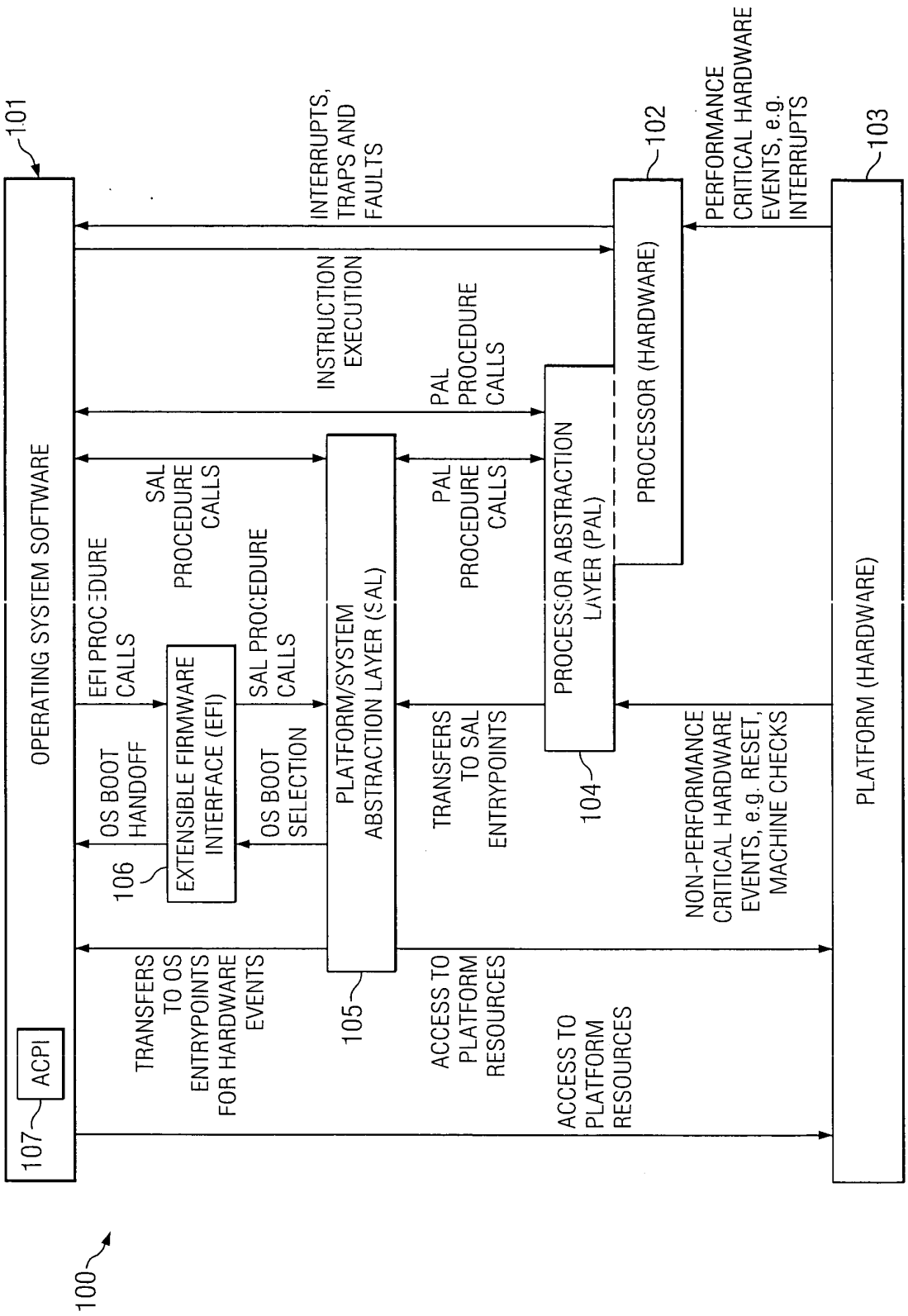

100
101
OPERATING SYSTEM SOFTWARE
107
ACPI
EFI PROCEDURE CALLS
OS BOOT HANDOFF
106
EXTENSIBLE FIRMWARE INTERFACE (EFI)
SAL PROCEDURE CALLS
OS BOOT SELECTION
PLATFORM/SYSTEM ABSTRACTION LAYER (SAL)
105
PAL PROCEDURE CALLS
PROCESSOR ABSTRACTION LAYER (PAL)
104
PROCESSOR (HARDWARE)
102
PLATFORM (HARDWARE)
103
INTERRUPTS, TRAPS AND FAULTS
INSTRUCTION EXECUTION
PAL PROCEDURE CALLS
PERFORMANCE CRITICAL HARDWARE EVENTS, e.g. INTERRUPTS
TRANSFERS TO OS ENTRYPOINTS FOR HARDWARE EVENTS
ACCESS TO PLATFORM RESOURCES
TRANSFERS TO SAL ENTRYPOINTS
NON-PERFORMANCE CRITICAL HARDWARE EVENTS, e.g. RESET, MACHINE CHECKS
ACCESS TO PLATFORM RESOURCES

FIG. 2

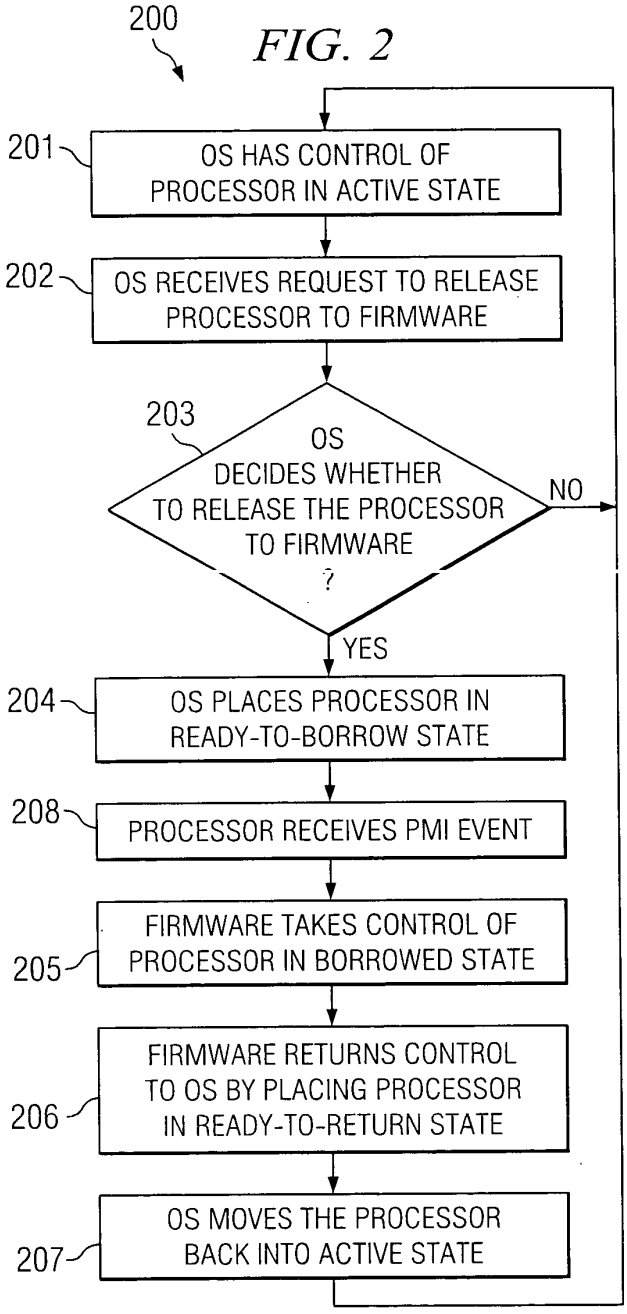

200
201
OS HAS CONTROL OF PROCESSOR IN ACTIVE STATE
202
OS RECEIVES REQUEST TO RELEASE PROCESSOR TO FIRMWARE
203
OS DECIDES WHETHER TO RELEASE THE PROCESSOR TO FIRMWARE ?
NO
YES
204
OS PLACES PROCESSOR IN READY-TO-BORROW STATE
208
PROCESSOR RECEIVES PMI EVENT
205
FIRMWARE TAKES CONTROL OF PROCESSOR IN BORROWED STATE
206
FIRMWARE RETURNS CONTROL TO OS BY PLACING PROCESSOR IN READY-TO-RETURN STATE
207
OS MOVES THE PROCESSOR BACK INTO ACTIVE STATE

FIG. 3

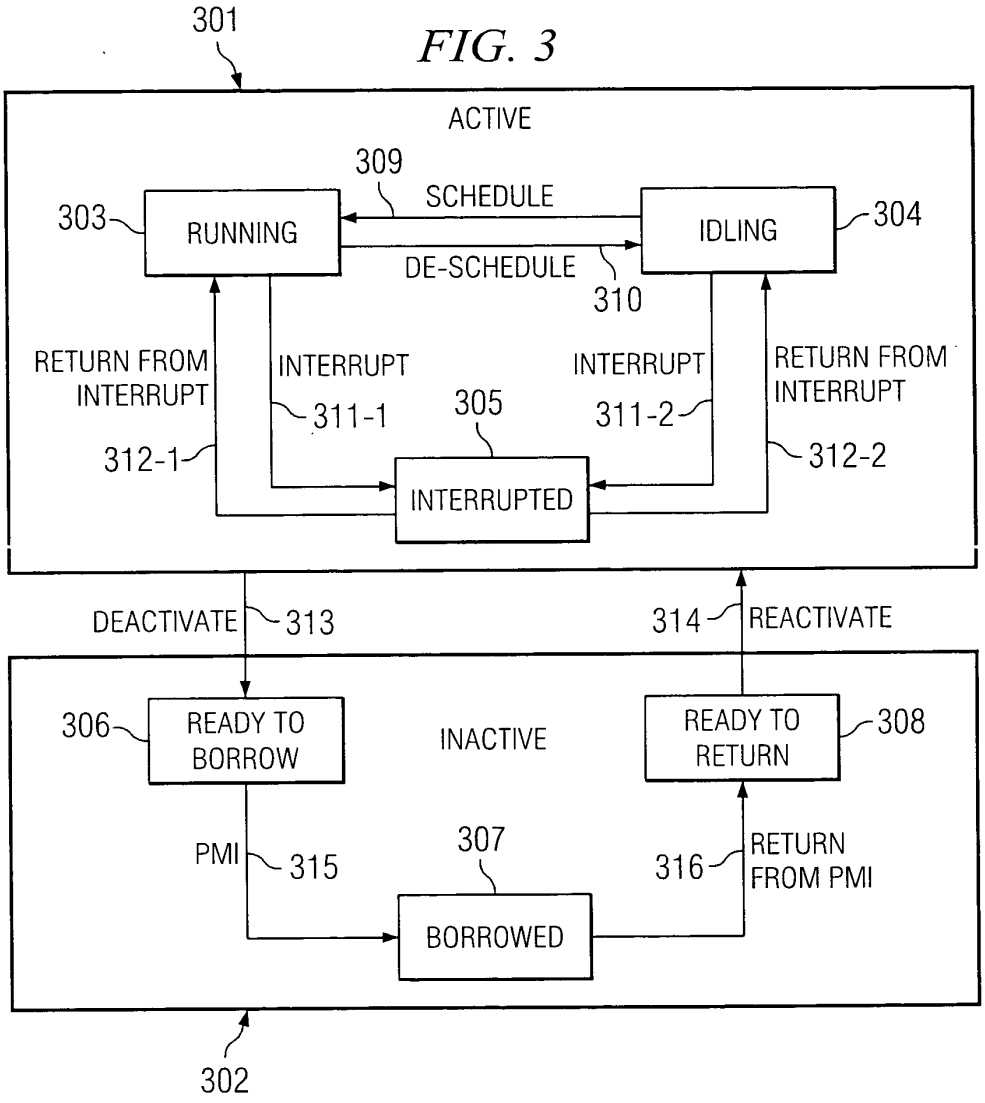
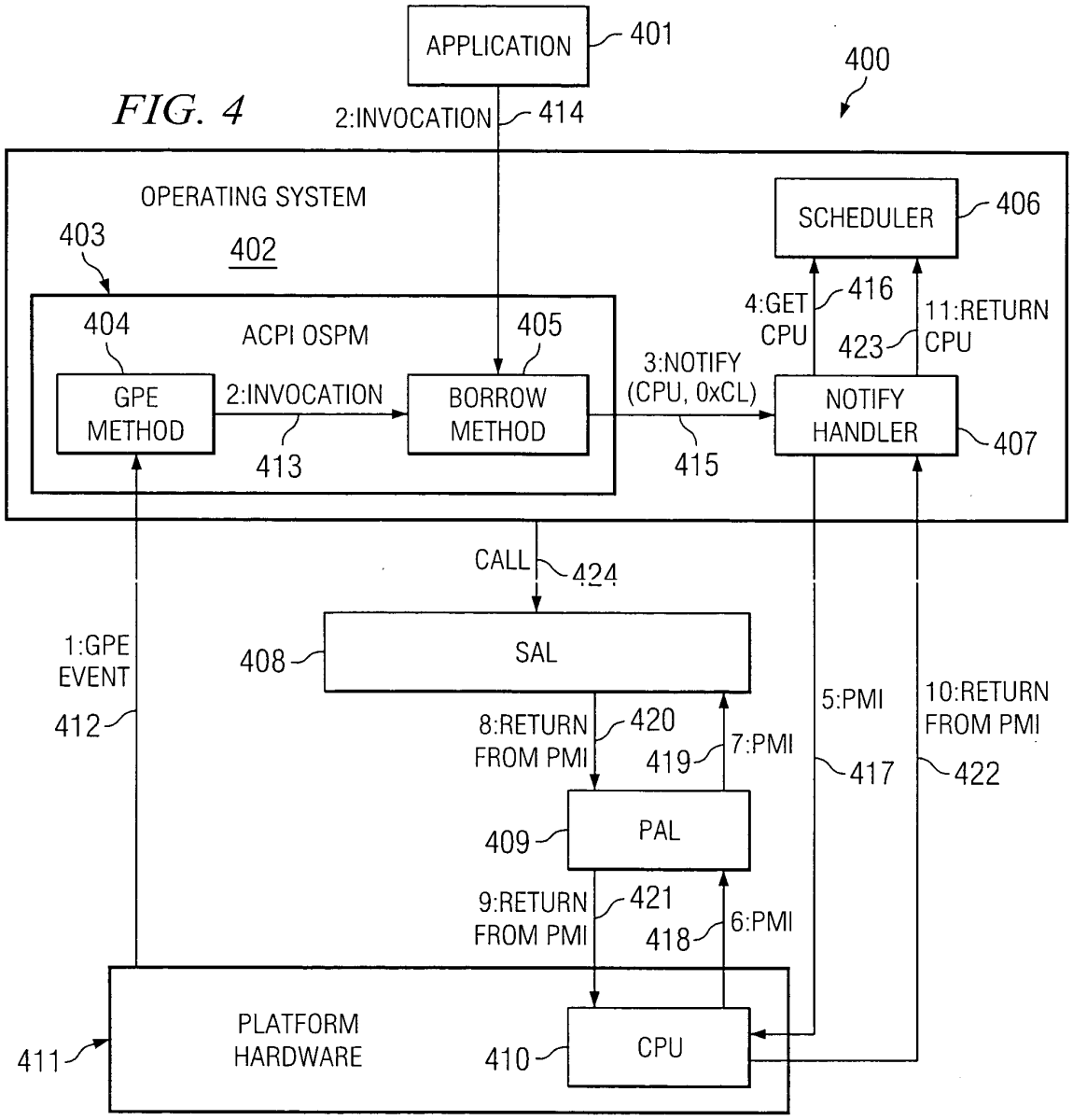

301
ACTIVE
309
SCHEDULE
303
RUNNING
IDLING
304
DE-SCHEDULE
310
RETURN FROM INTERRUPT
INTERRUPT
311-1
305
INTERRUPT
311-2
RETURN FROM INTERRUPT
312-1
312-2
INTERRUPTED
DEACTIVATE
313
314
REACTIVATE
306
READY TO BORROW
INACTIVE
READY TO RETURN
308
PMI
315
307
316
RETURN FROM PMI
BORROWED
302

FIG. 4


APPLICATION
401
400
2:INVOCATION
414
OPERATING SYSTEM
402
403
SCHEDULER
406
404
ACPI OSPM
405
4:GET CPU
416
11:RETURN CPU
423
GPE METHOD
2:INVOCATION
413
BORROW METHOD
3:NOTIFY (CPU, 0xCL)
415
NOTIFY HANDLER
407
CALL
424
1:GPE EVENT
412
408
SAL
5:PMI
417
10:RETURN FROM PMI
422
8:RETURN FROM PMI
420
419
7:PMI
409
PAL
9:RETURN FROM PMI
421
418
6:PMI
PLATFORM HARDWARE
411
410
CPU